REMARKS

Claims 7, 10, 11, 13, 14, 16-20, and 24-26 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103 – RAVINOVITCH IN VIEW OF KRAFT

Claims 7, 10, 11, 13, 16, 17, 19, 20, and 24 are rejected under 35 USC 103(a) as allegedly being unpatentable over Ravinovitch et al. (US Pat. No. 4,424,292) (hereinafter Ravinovitch) in view of Kraft et al. (US Pat. No. 4,056,397) (hereinafter Kraft). This rejection is respectfully traversed.

Claims 7, 10, 11, 13, 16, 17, 19, 20, and 24 of the present disclosure include, among other features, an infrared reflective pigment in a sufficient amount so that there is essentially no transmittance of light of near infrared wavelength present in a film or coating layer from about 1 mil to about 20 mils. Ravinovitch "does not teach that the pigment should be included in a sufficient amount so that 'there is essentially no transmittance of light of near infrared wavelength through the film'" and "Ravinovitch does not teach the claimed thickness" of the present disclosure. Office Action July 27, 2006, page 3. The Kraft reference cannot be properly combined with Ravinovitch, since Kraft is nonanalogous art and not pertinent to applicant's endeavor. Even so, the addition of the Kraft reference still fails to cure the deficiencies of Ravinovitch. Thus, the combination of Ravinovitch and Kraft fails to render the present invention obvious in that the combination does not disclose or suggest the present invention to the skilled artisan.

The Kraft reference is directed towards photographic monosheet material (for use in cameras) for a dye diffusion transfer process. Kraft abstract and col. 1, lines 4-5. The photographic monosheet material contains a light reflecting pigment layer. Col. 2, lines 49-50. The light reflective pigment layer is designed to reflect visible light to mask the image silver and form a light proof seal. Col. 8, line 4 et seq. Masking and forming a light proof seal in photographic film is not in the same field of endeavor as infrared reflecting vinyl polymer compositions designed to reduce heat buildup. The goal of masking and blocking visible light in photographic film is not analogous to reflecting infrared light to reduce heat. A skilled artisan, when viewing the Ravinovitch reference, would not look to photographic film inside cameras that has visible light masking and blocking pigment layers, as the photographic monosheet material would not logically commend itself to addressing infrared reflectance of structural siding. A reference that is neither in the art of the Applicant's invention nor directed to the problem the Applicant sought to solve is nonanalogous art that cannot support a prima facie rejection for obviousness. *In re Clay*, 966 F.2d 656, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

Even if the Kraft patent was available as prior art, the combination with Ravinovitch fails to disclose or suggest the present claims. The Office Action combines Kraft with Ravinovitch for allegedly teaching that "the whiteness (herein understood to be synonymous with reflectiveness) of the film can be optimized by optimizing its thickness (col. 8, lines 18+)." Office Action from July 27, 2006, page 3 (citing Kraft). Therefore, at best, Kraft informs the skilled artisan that increasing a pigment layer thickness can increase reflectivity.

The Ravinovitch reference provides an example of capstock (the outer weatherable layer in coextended vinyl house siding and vinyl windows, etc.) in col. 4, line 58 et seq. The capstock consisted of pressed panels 6 in. x 6 in. x 0.45 in. Col. 5, line 1. The thickness of the Ravinovitch capstock was therefore 0.45 in., which corresponds to 450 mils. Thus, Ravinovitch discloses a 450 mil layer, which is not the claimed thickness of 1-20 mils of the present invention.

If a skilled artisan were to combine Ravinovitch with the Kraft teachings, the skilled artisan would take the capstock from Ravinovitch and, applying the proposition from Kraft, would consequently *increase* the thickness in order to optimize the reflection spectra of the layer. Specifically, any attempt by a skilled artisan to modify the teachings of Ravinovitch in view of Kraft would result in *increasing* the thickness of the capstock layer in an attempt to provide essentially no transmittance of light of near infrared wavelength. Since the capstock disclosed in Ravinovitch is 450 mils, the skilled artisan would only increase the thickness thereby producing capstock greater than 450 mils. Consequently, the combination of these references does not result in a pigment layer having an infrared pigment in a sufficient amount so that there is essentially no transmittance of light of near infrared wavelength through the film wherein the film is about 1 mil to about 20 mils thick.

In contrast to the combination of references, the present disclosure provides layers that are more than an order of magnitude *thinner* than the Ravinovitch disclosure. Application of the proposition taken from Kraft only further accentuates this difference, since Kraft in effect *teaches away* from making the capstock thinner, and instead motivates the skilled artisan to increase the thickness to increase the reflectivity. There

is no suggestion, appreciation, or motivation in these references for reducing the thickness of the Ravinovitch capstock layer to the thicknesses used in the present invention.

Therefore, in view of these two references, the skilled artisan would not produce the present invention as embodied in claims 7, 10, 11, 13, 16, 17, 19, 20, and 24. Accordingly, the straightforward combination of Ravinovitch and Kraft does not include all the features of the present invention, and furthermore, neither reference provides the requisite motivation or suggestion to re-engineer the Ravinovitch disclosure to create the present invention. Applicants respectfully request reconsideration of the claims and withdrawal of the rejection.

REJECTION UNDER 35 U.S.C. § 103 – RAVINOVITCH IN VIEW OF KRAFT AND SULLIVAN

Claims 14 and 18 are rejected under 35 USC 103(a) as being unpatentable over Ravinovitch et al. (US Pat. No. 4,424,292) and in view of Kraft et al. (US Pat. No. 4,056,397) and Sullivan et al. (US Pat. No. 6,416,868) (hereinafter Sullivan).

Claims 14 and 18 of the present disclosure apply the various films or coating layers to aluminum articles. The Sullivan reference, which teaches coating metal substrates (col. 6, lines 49-53), is applied in addition to the references from the preceding section to reject these claims. However, as demonstrated in the preceding section, a skilled artisan modifying the teachings of Ravinovitch with the proposition from Kraft would produce a capstock layer of > 450 mils in any attempt to optimize reflectivity and produce a layer having essentially no transmittance of light of near infrared wavelength. The Sullivan reference is silent on this subject.

Thus, no combination of these references would produce a film or coating layer from about 1-20 mils (or about 2-5 mils) that is applied to an aluminum article and that provides essentially no transmittance of light of near infrared wavelength. Reconsideration of the claims and withdrawal of the rejection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 103 – STAMPER

Claims 7, 10, 11, 13, 16, 17, 25, and 26 are rejected under 35 USC 103(a) as being obvious over Stamper et al. (US Pat. No. 4,574,103) (hereinafter Stamper).

The present claims include various embodiments of films and coating layers having a plastisol composition comprising a poly(vinyl chloride) polymer, at least one plasticizer, and an infrared-reflective pigment in a sufficient amount so that there is essentially no transmittance of light of near infrared wavelength. The films and coating layers can be about 1-20 mils thick.

In contrast, the Stamper reference discloses a laminate of two layers. A first layer of vinyl chloride polymer containing Sb_2O_3 is cast or reverse coated on release paper. Next, a second layer of vinyl chloride polymer containing TiO_2 is cast or reverse roller coated on the first layer. The laminate can then be wound up on a take-off roll. Each layer of the laminate has a thickness of from about 12-50 mils, so that overall the laminate has a total thickness of from about 24-100 mils. Col. 2, lines 21-41.

The Sb_2O_3 acts as a fire retardant and the TiO_2 layer protects the Sb_2O_3 layer since in sunlight Sb_2O_3 adversely affects PVC. Stamper Col. 1, lines 32-39. Thus, it is an express goal of the Stamper reference to use the TiO_2 layer to protect the Sb_2O_3 layer from sunlight. Consequently, in view of the Stamper reference, there is no

suggestion or motivation provided to a skilled artisan to separate the TiO_2 layer from the Sb_2O_3 layer, and, in fact, Stamper is expressly teaching away from separating the layers. Therefore, the Stamper laminate of 24-100 mils does not render the present invention obvious, as the Stamper thickness is not the same as the various films and coating layers of the present invention which are about 1-20 mils.

Furthermore, Stamper does not provide any motivation, appreciation, or suggestion to a skilled artisan that the TiO_2 layer provides essentially no transmittance of light of near infrared wavelength. Instead, the goal of the TiO_2 layer in the Stamper reference is protect the Sb_2O_3 layer from sunlight, since in sunlight Sb_2O_3 adversely affects PVC. There is nothing in Stamper to suggest that the amount of protection required for the Sb_2O_3 layer equates to no transmittance of light of near infrared wavelength. In fact, Stamper is completely silent as to what type, level, or extent of protection is necessary to keep the Sb_2O_3 from adversely affecting the PVC. A skilled artisan would not infer or be motivated from the Stamper reference that one can or should use an infrared reflective pigment in an amount to provide essentially no transmittance of light of near infrared wavelength.

In sum, since the Stamper laminate is thicker than the express thicknesses of the films and coating layers of the present invention, and since Stamper necessarily requires the two layers in the laminate, which is about 24-100 mils, Stamper does not render the present invention obvious. In addition, since Stamper is completely silent as to providing a layer having essentially no transmittance of light of near infrared wavelength, and is focused instead on preventing only adverse effects of Sb_2O_3 on PVC, there is no motivation to re-engineer the reference to recreate the present

invention. Accordingly, the present claims are not obvious. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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